

Figure 1

- 102 Specify the vehicle geometry
- 104 Map the prohibited subzones
- 106 Map the routing points and connectors, particularly between zones
- 108 Map the electrical and electronic components
- 110 Synthesis of the routing of signals
- 112 Synthesis of the routing of power
- 114 Synthesis of the routing of ground links
- 116 Cost evaluation
- 118 Quality evaluation
- 120 Weight evaluation

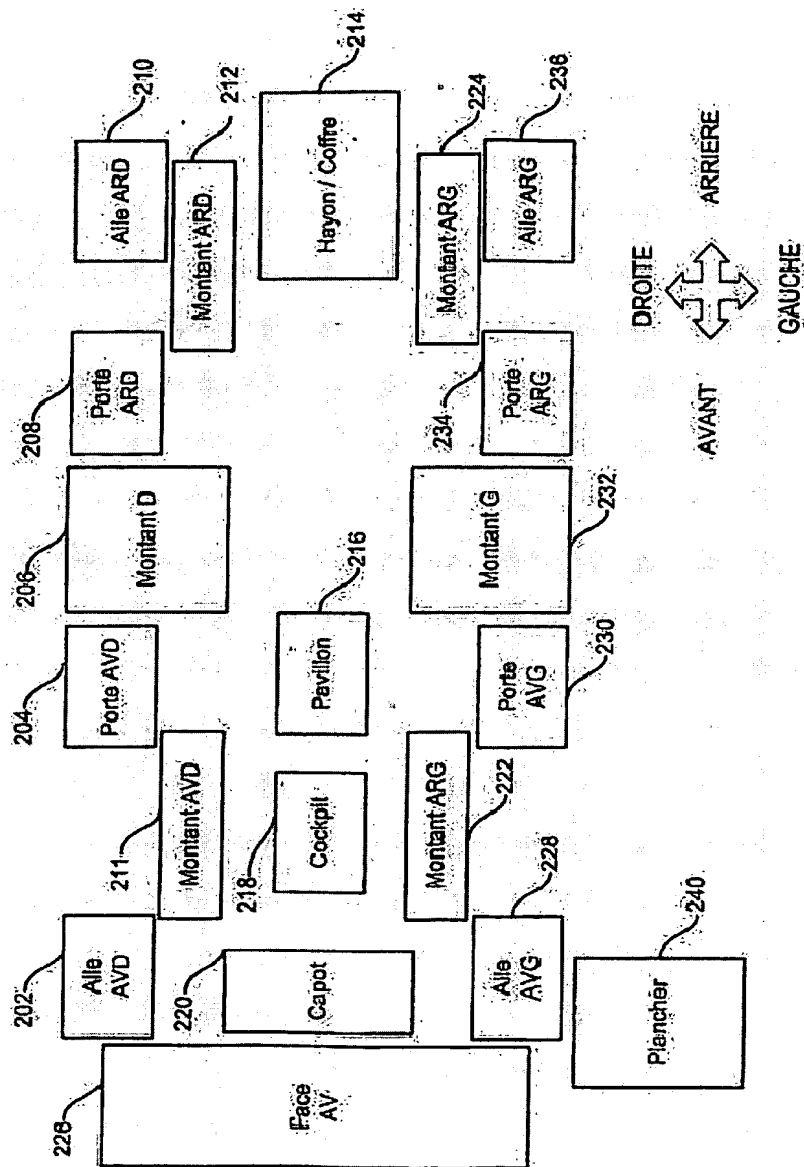


Figure 2

226	Front face	220	Hood	232	Left column
202	Right front fender	218	Cockpit	234	Left rear door
204	Right front door	216	Roof	236	Left rear fender
206	Right column	214	Tailgate / Trunk	240	Floorboard
208	Right rear door	222	Left rear column	DROITE	RIGHT
210	Right rear fender	224	Left rear column	AVANT	FRONT
211	Right front column	228	Left front fender	ARRIERE	REAR
212	Right rear column	230	Left front door	GAUCHE	LEFT

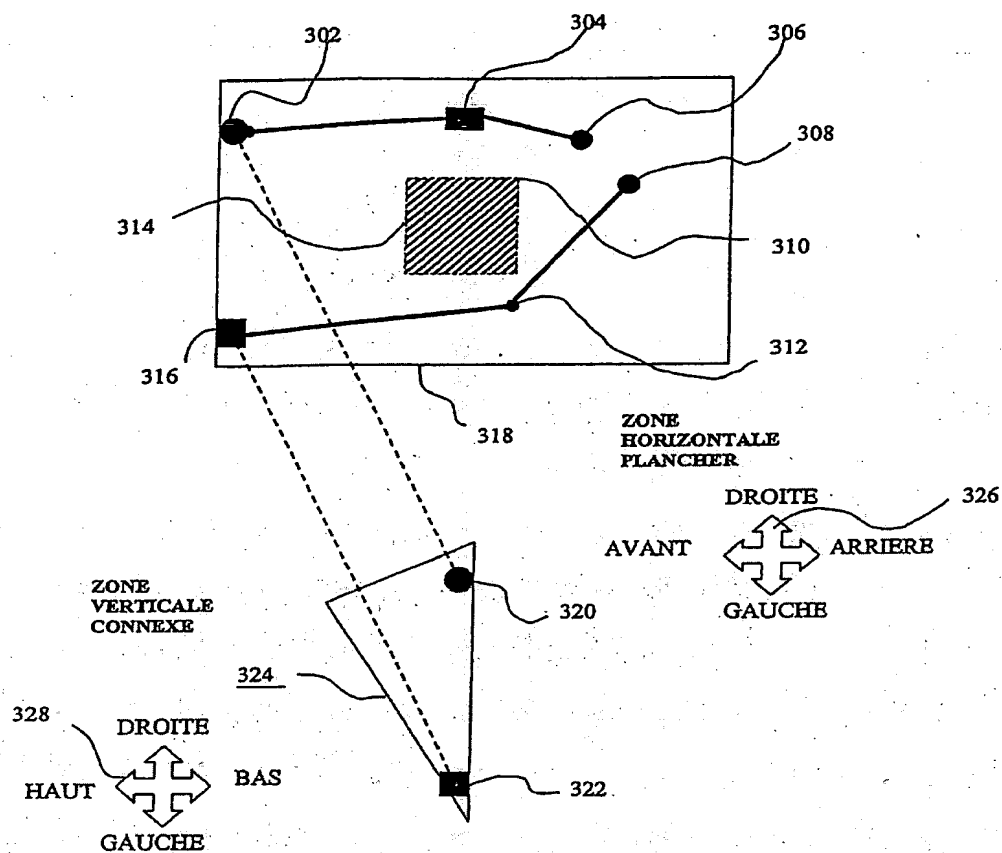


Figure 3

**CONTIGUOUS
 VERTICAL
 ZONE**

DROITE	RIGHT
HAUT	TOP
GAUCHE	LEFT
BAS	BOTTOM

**FLOORBOARD
 HORIZONTAL
 ZONE**

DROITE	RIGHT
AVANT	FRONT
GAUCHE	LEFT
ARRIERE	BACK

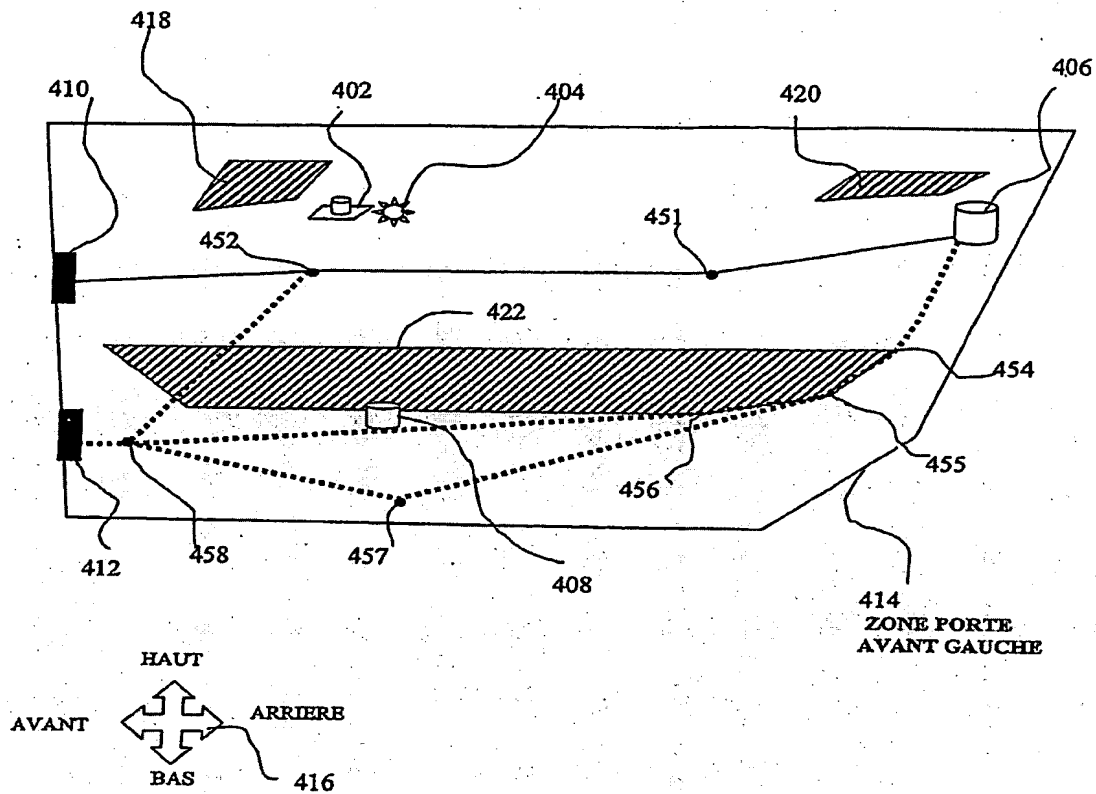


Figure 4

**LEFT FRONT
 DOOR ZONE**

HAUT	TOP
AVANT	FRONT
BAS	BOTTOM
ARRIERE	REAR

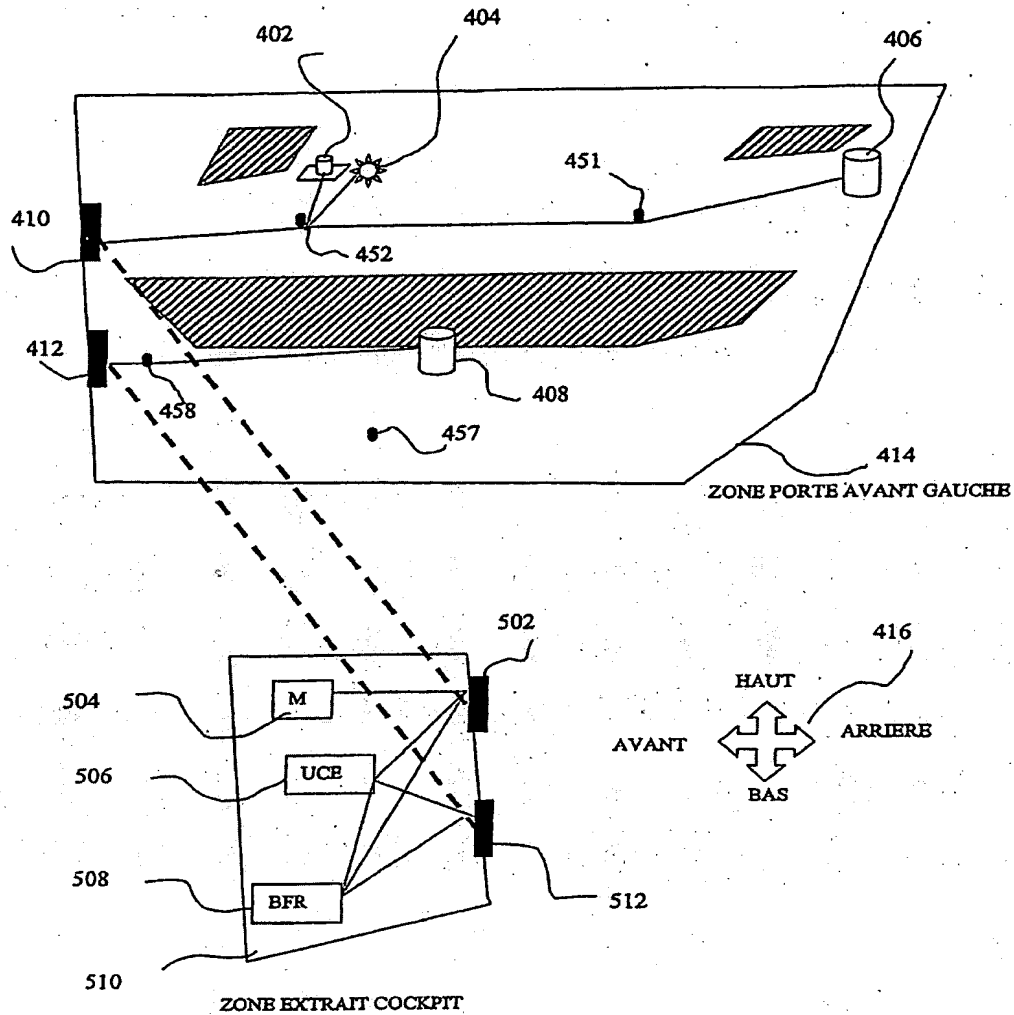


Figure 5

LEFT FRONT DOOR ZONE

504 Ground
 506 Electronic control unit
 510 Fuse and relay box

COCKPIT EXTRACT ZONE

HAUT TOP
 AVANT FRONT
 BAS BOTTOM
 ARRIERE REAR

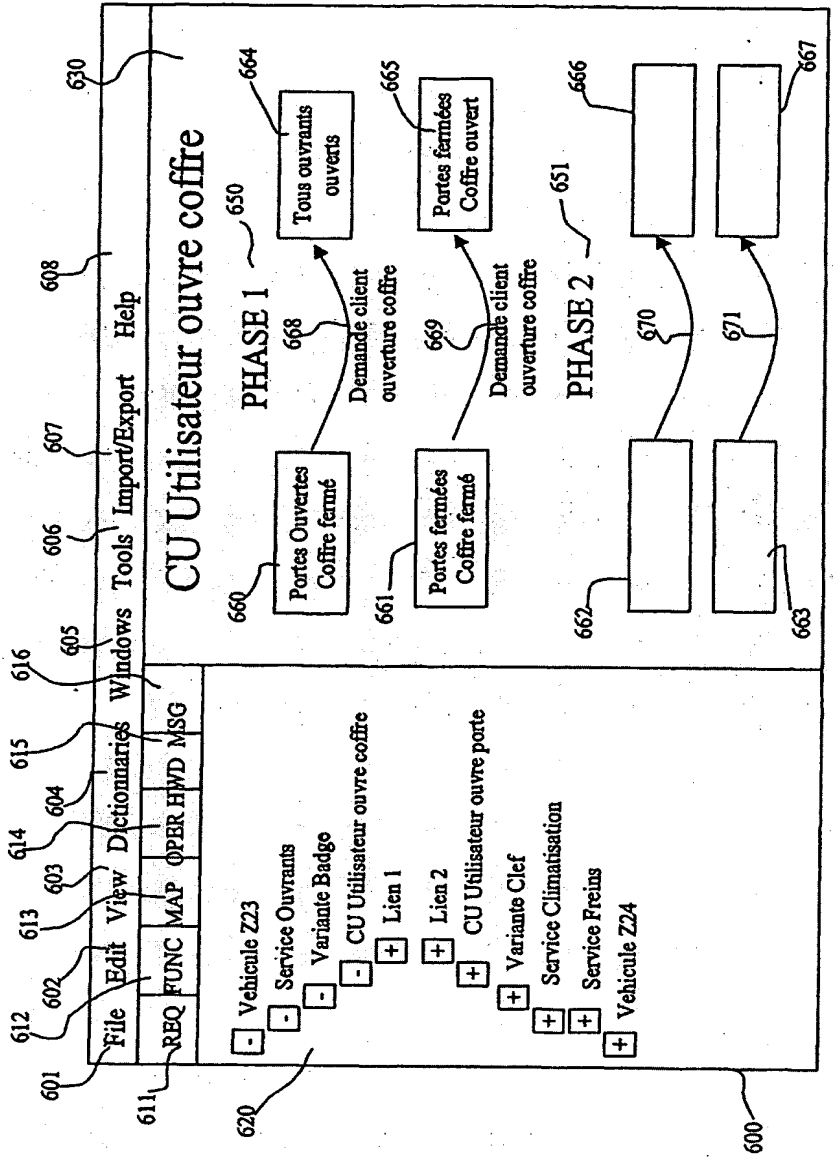


Figure 6

Use case: user opens trunk

Vehicle Z23
Openings service
Badge variant
Use case: user opens trunk
Link 1
Link 2
Use case: user opens door
Key variant
Air-conditioning service
Brake service
Vehicle Z24

660 Doors open, trunk closed
668 Client request to open trunk
664 All openings open
661 Doors closed, trunk closed
669 Client request to open trunk
665 Doors closed, trunk open

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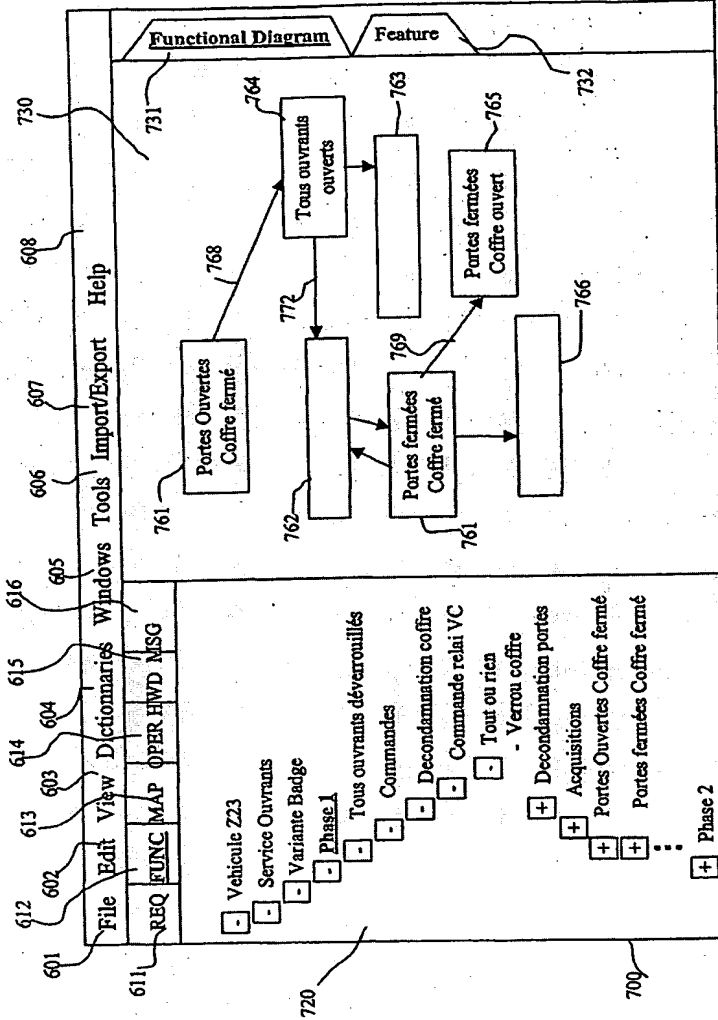


Figure 7

Vehicle Z23
Openings service
Badge variant
Phase 1
All openings unlocked
Instructions
Unlatch trunk
Trunk-lock relay instruction
All-or-nothing
- Trunk lock
Unlatch doors
Acquisitions
Doors open, trunk closed
Doors closed, trunk closed
Phase 2

761 Doors open, trunk closed
764 All openings open
761 Doors closed, trunk closed
765 Doors closed, trunk open

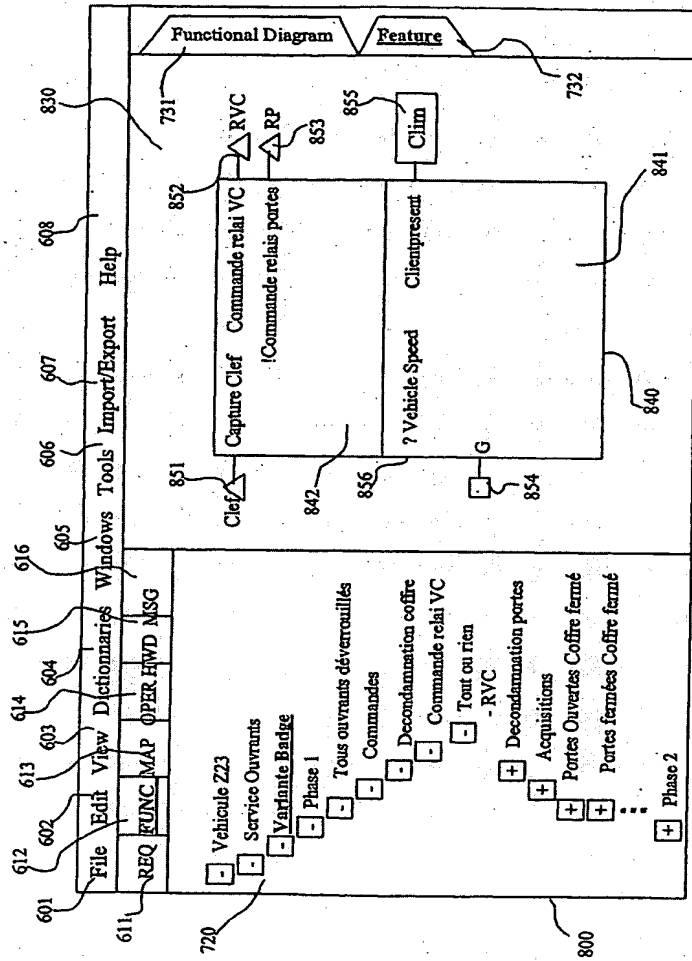


Figure 8

- 851 Key
852 Trunk-lock relay
853 Door relay
855 Air conditioning
Capture ... = Key sensing
Commande ... = Trunk-lock relay instruction
Door relay instruction

- Vehicle Z23
Openings service
Badge variant
Phase 1
All openings unlocked
Instructions
Unlatch trunk
Trunk-lock relay instruction
All-or-nothing
- Trunk-lock relay
Unlatch doors
Acquisitions
Doors open, trunk closed
Doors closed, trunk closed
Phase 2

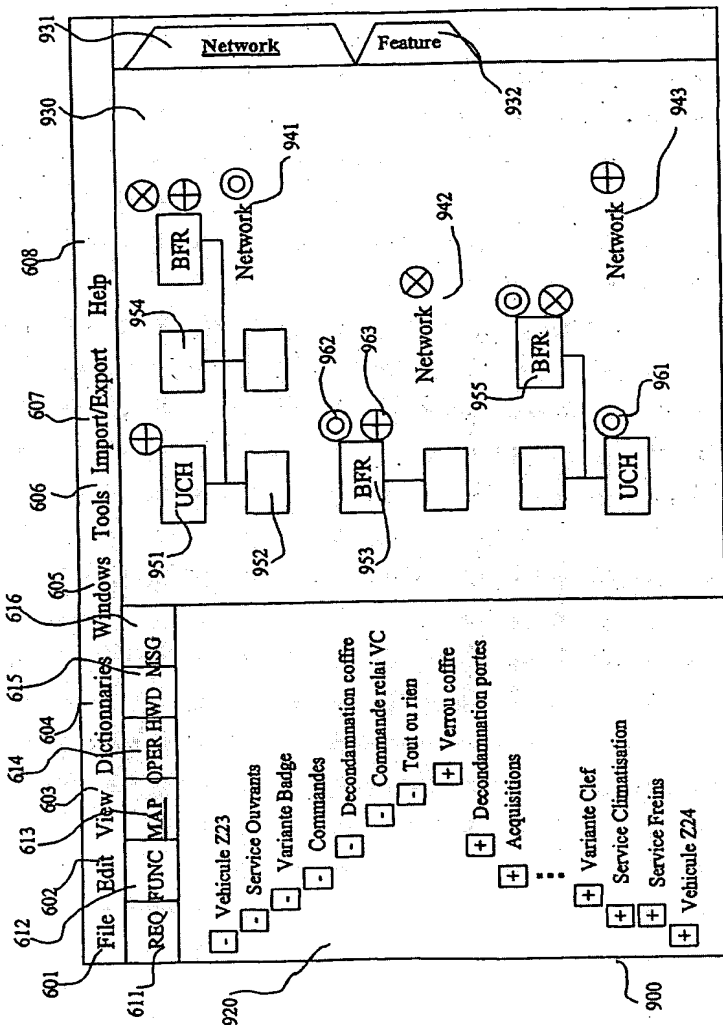


Figure 9

UCH Passenger-compartment control unit
BFR Fuse and relay box

Vehicle Z23
Openings service
Badge variant
Instructions
Unlatch trunk
Trunk-lock relay instruction
All-or-nothing
Trunk lock
Unlatch doors
Acquisitions
Key variant
Air-conditioning service
Brake service
Vehicle Z24

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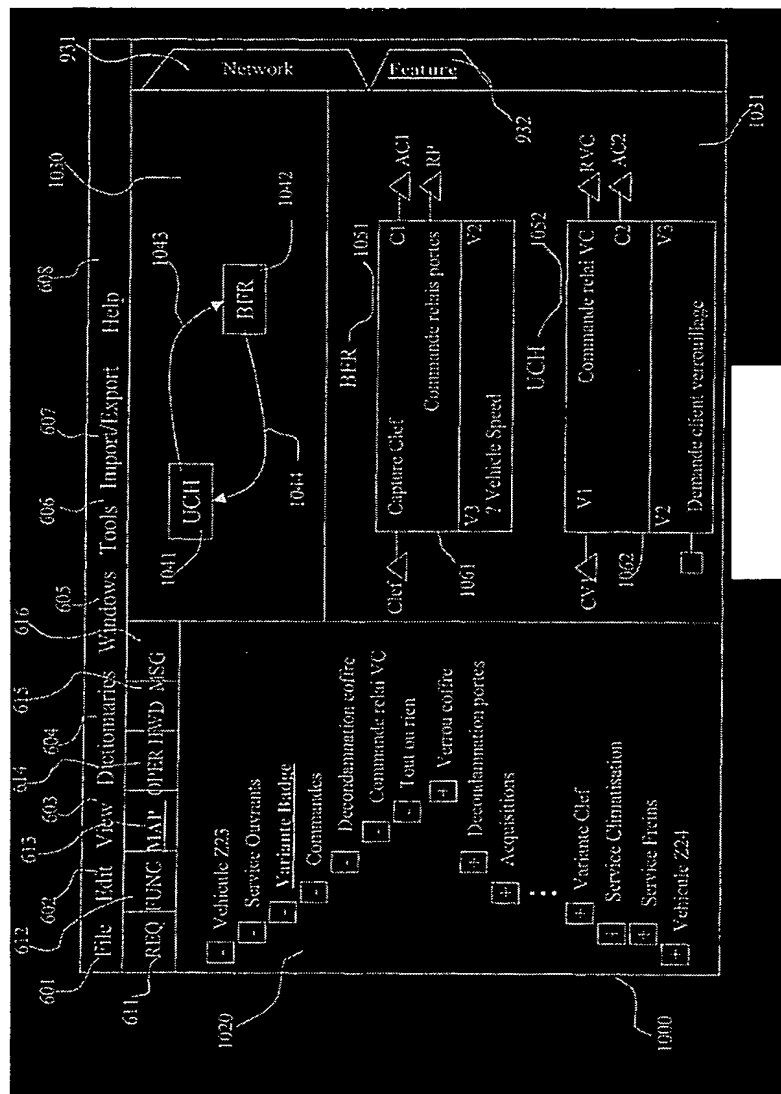


Figure 10

Vehicle Z23
Openings service
Badge variant
Instructions
Unlatch trunk
Trunk-lock relay instruction
All-or-nothing
Trunk lock
Unlatch doors
Acquisitions
Key variant
Air-conditioning service
Brake service
Vehicle Z24

UCH Passenger-compartment control unit
BFR Fuse and relay box
Clef Key
Capture ... = Key sensing
Commande ... = Door relay instruction
RP Door relay
Commande ... = Trunk-lock relay instruction
RVC Trunk-lock relay
Demande ... Client request to lock

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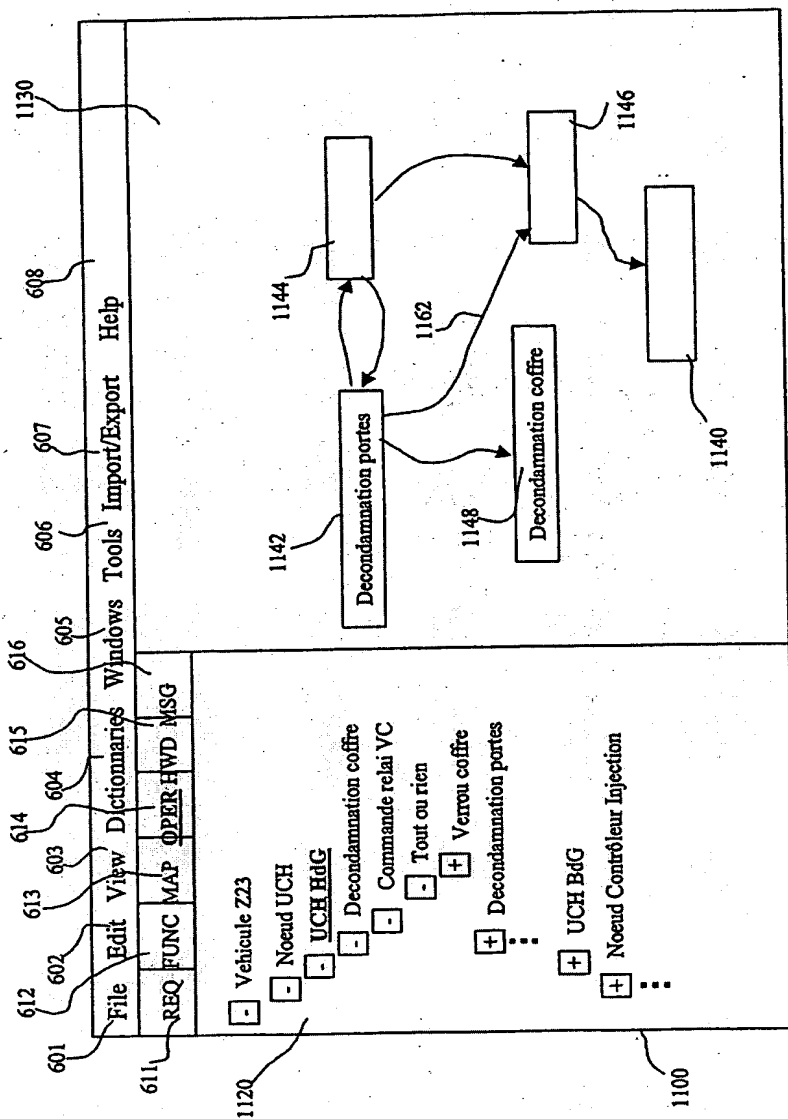


Figure 11

Vehicle Z23
Passenger-compartment control-unit node
Passenger-compartment control-unit HdG
Unlatch trunk
Trunk-lock relay instruction
All-or-nothing
Trunk lock
Unlatch doors
Passenger-compartment control-unit BdG
Injection controller node

1142 Unlatch doors
1148 Unlatch trunk

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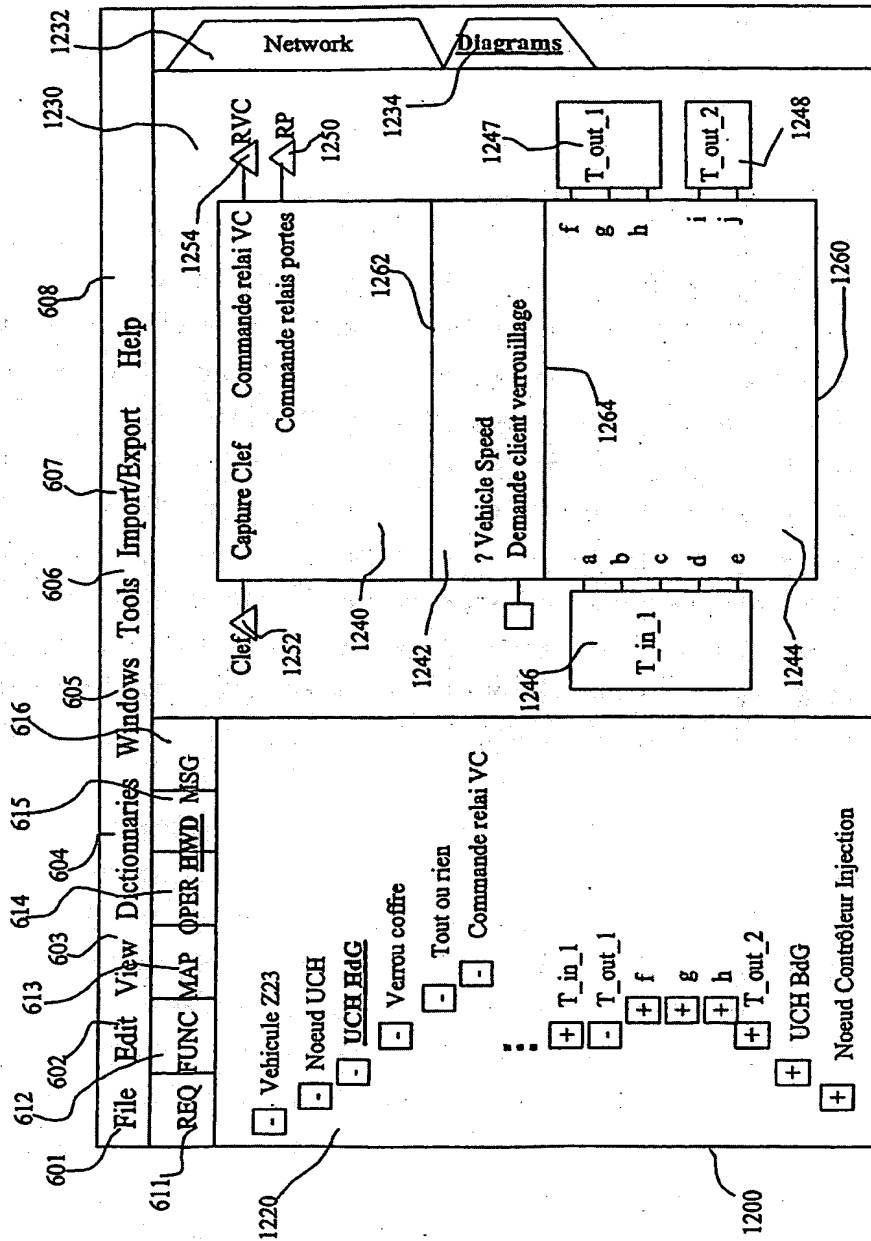
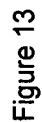


Figure 12

- Vehicle Z23
Passenger-compartment control-unit node
Passenger-compartment control-unit HdG
Trunk lock
All-or-nothing
Trunk-lock relay instruction
Passenger-compartment control-unit BdG
Injection controller node
- Clef Key
Capture ... = Key sensing
Comande ... = Trunk-lock relay instruction
RVC Trunk-lock relay
Comande ... = Door relay instruction
RP Door relay
Demande ... Client request to lock



Nodes

Passenger-compartment control-unit node

BVA node

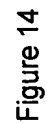
1346 Right front fender

Vehicle Z23
Right

Rear

Left

Components
Accelerator pedal
Front wipers



Nodes
 Passenger-compartment control-unit node
 BVA node
Components
 Accelerator pedal
 Front wipers
 Window lifter button
 Light of window lifter button

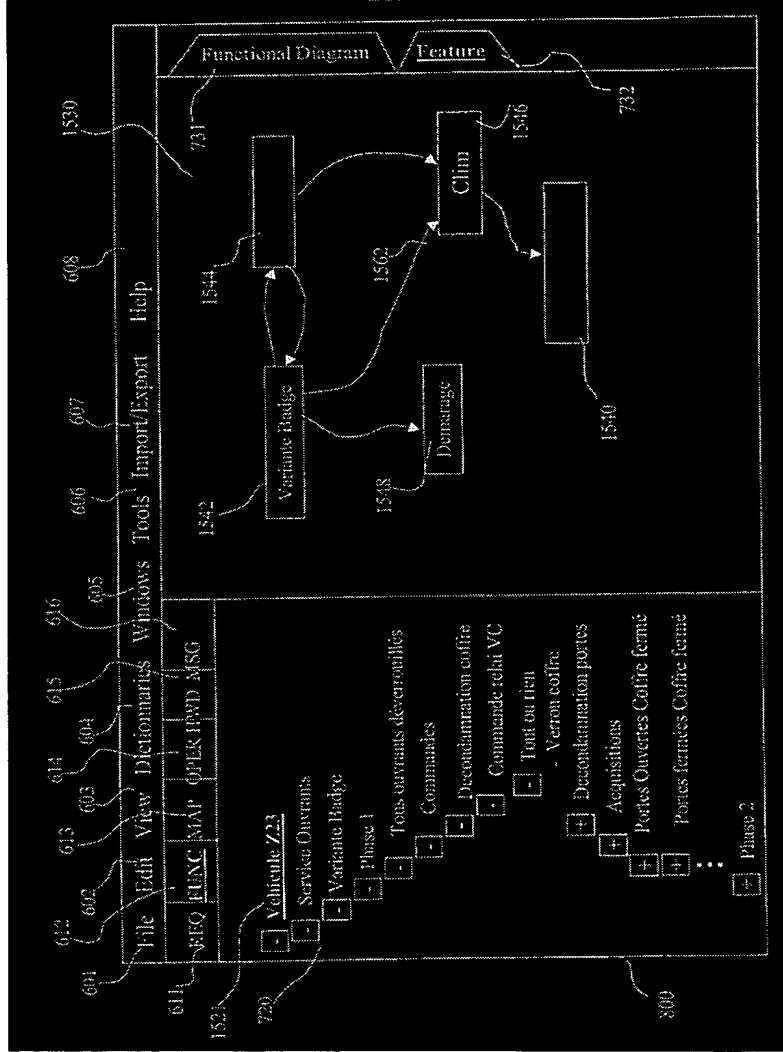


Figure 15

Vehicle Z23

- Openings service
- Badge variant
- Phase 1
- All openings unlocked
- Instructions
- Unlatch trunk
- Trunk-lock relay instruction
- All-or-nothing
- Trunk lock
- Unlatch doors
- Acquisitions
- Doors open, trunk closed
- Doors closed, trunk closed
- Phase 2

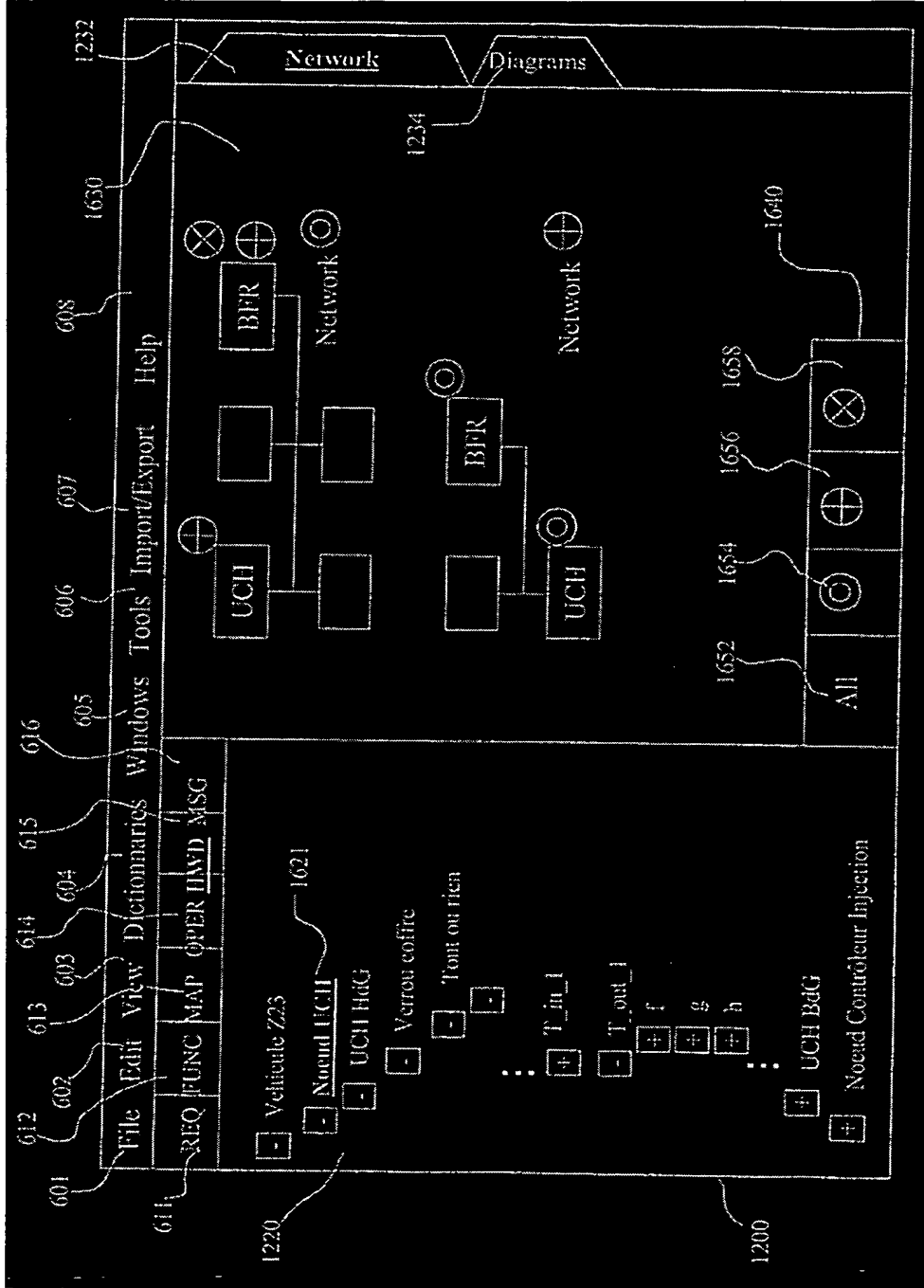


Figure 16

Vehicle Z23

Passenger-compartment control-unit node

Passenger-compartment control-unit HdG

Trunk lock

All-or-nothing

Passenger-compartment control-unit BdG

Injection controller node

UCH

BFR

Passenger-compartment control unit

Fuse and relay box

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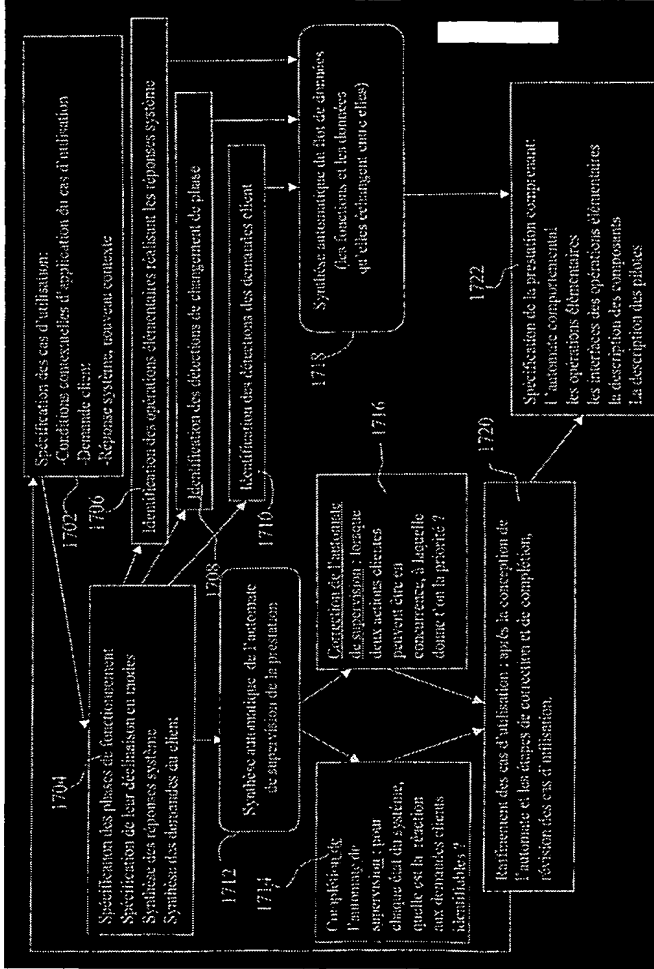


Figure 17

1702	Specification of use cases: - Contextual conditions of application of the use case - Client request - System response, new context	1716	Correction of the supervising automaton: when two client actions may be competing, which is given priority?
1704	Specification of operating phases Specification of their declinations in mode Synthesis of system responses Synthesis of client requests	1718	Automatic synthesis of the data flow (the functions and the data that they exchange with one other)
1706	Identification of elementary operations for executing the system responses	1720	Refinement of use cases: after design of the automaton and the steps of correction and supplementation, revision of use cases.
1708	Identification of detections of phase change	1722	Specification of the service comprising: the behavior automaton the elementary operations the interfaces of the elementary operations the description of the components the description of the drivers
1710	Identification of detections of client requests		
1712	Automatic synthesis of the automaton for supervision of the service		
1714	Supplementation of the supervising automaton: for each system state, what is the reaction to identifiable client requests?		

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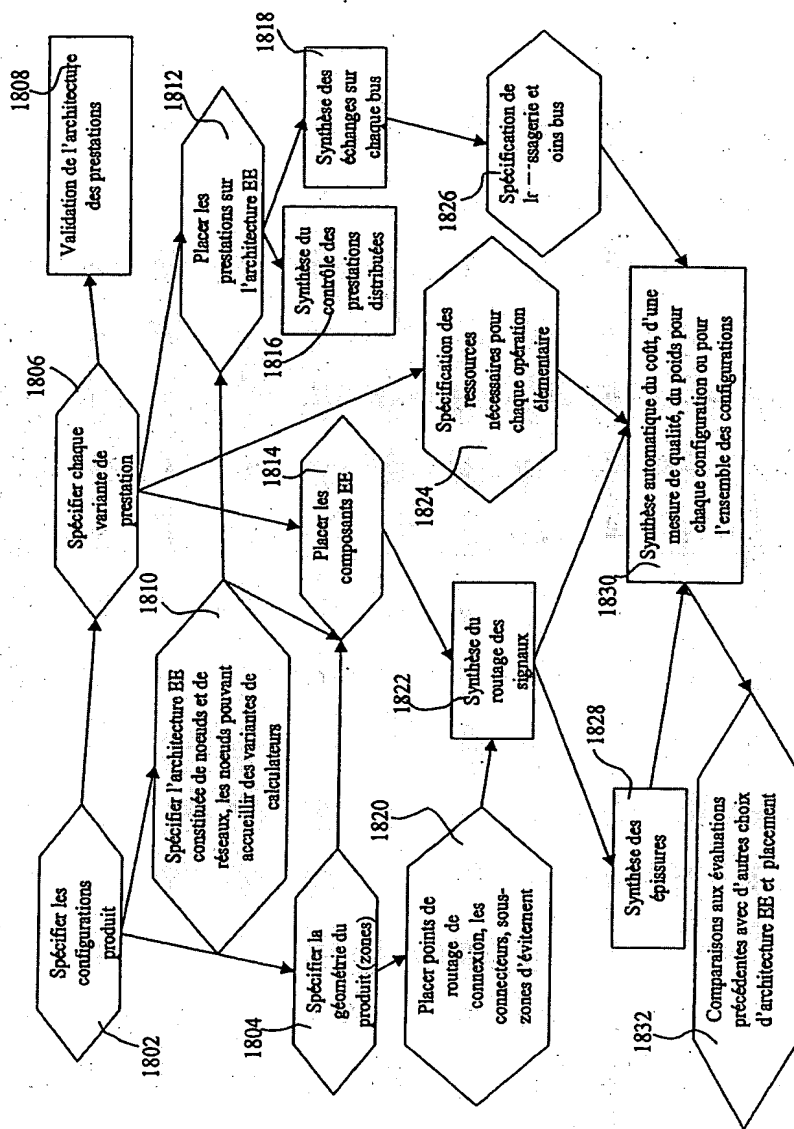


Figure 18

- | | | | |
|------|--|------|---|
| 1802 | Specify the product configurations | 1816 | Synthesis of control of distributed services |
| 1804 | Specify the product geometry (zones) | 1822 | Synthesis of routing of signals |
| 1806 | Specify each service variant | 1824 | Specification of resources necessary for each elementary operation |
| 1808 | Validation of the service architecture | 1826 | Specification of the electronic messaging service and bus needs |
| 1810 | Specify the electrical and electronic architecture composed of nodes and networks, the nodes being able to receive calculator variants | 1828 | Synthesis of splices |
| 1812 | Map the services onto the electrical and electronic architecture | 1830 | Automatic synthesis of the cost, of a measure of quality, and of the weight for each configuration or for the set of configurations |
| 1814 | Map the electrical and electronic components | 1832 | Comparisons with the preceding evaluations using other choices of electrical and electronic architecture and mapping |